

REMARKS

Claims 1-20 are pending in the application. No claim was allowed.

Claim Rejections

Claims 1-10 and 12-20 were rejected under 35 U.S.C. §102(e) as being anticipated by Chu et al. (US Pregrant Publication 2005/0074946; "Chu"). Claim 11 was rejected under 35 U.S.C. §103(a) as being unpatentable over Chu in view of Williams et al. (US US Pregrant Publication 2004/0020894; "Williams").

The pending claims relate to chemical vapor deposition and biased etch back processes that replace fluorine-based etchants with hydrogen. In particular, the claims are directed to a high density plasma chemical vapor etch-enhanced gap fill process using hydrogen as an etchant that can effectively fill high aspect ratio, narrow width gaps while reducing or eliminating dielectric contamination by etchant chemical species. The claimed process involves a multi-step deposition, etch back and deposition process.

Chu also relates to a gap fill process, but the stated object of the Chu invention is to provide a single step gap-fill process "to avoid the tedious steps in the deposition/etch/deposition methods in the prior art." See paragraph [0009]. Chu describes a single step process chemistry that includes a mixture of hydrogen and helium in a certain ratio to other process gases (paragraphs 0020-0021 and Table 1), but describes no separate etch process chemistry.

Accordingly, the Chu application is explicitly directed to a different, single-step, gap-fill process than the presently claimed multi-step process. Therefore, Chu provides no disclosure or teaching of a separate etch back step of the process at all, and certainly not one which uses an etch process chemistry consisting essentially of hydrogen, as claimed. Thus, it is respectfully submitted that Chu does not anticipate the present claims and withdrawal of the rejection of claims 1-10 and 12-20 under 35 U.S.C. §102(e) is respectfully requested.

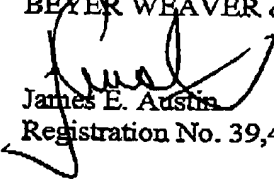
With regard to claim 11, Williams is relied upon for its teaching regarding RF inductively coupled plasma. However, it is respectfully submitted that Williams does not overcome the noted deficiencies of Chu with regard to the claimed invention, and withdrawal of the rejection under 35 U.S.C. §103(a) is also respectfully requested.

Conclusion

Applicants believe that all pending claims are allowable and respectfully request a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be

reached at the telephone number set out below. If any additional fees are due in connection with the filing of this amendment, the Commissioner is authorized to charge such fees to Deposit Account 500388 (Order No. NOVLP090).

Respectfully submitted,
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